

Amendments to the Specification:

On page 5, please amend ¶ [0031] as follows:

Figure 15A depicts ~~[[an]]~~ a prior art NRD waveguide backplane system.

On page 5, please amend ¶ [0033] as follows:

Figure 16 shows a plot of inter-waveguide crosstalk vs. frequency for the prior art waveguide system of Figure ~~[[13A]]~~ 15A.

On page 7, please amend ¶ [0040] as follows:

Figure 5 depicts a closed, extruded, conducting pipe, rectangular waveguide 10. Waveguide 10 is generally rectangular in cross-section and is disposed along a waveguide axis 12 (shown as the z-axis in Figure 5). Waveguide 10 has an upper broadwall 14 disposed along waveguide axis 12, and a lower broadwall 16 opposite and generally parallel to upper broadwall 14. Waveguide 10 has a pair of sidewalls 18A, 18B, each of which is generally perpendicular to and connected to broadwalls 12 and 14. Waveguide 10 has a width a along the x-axis, and a height b along the ~~7-axis~~ y-axis. Height b is typically less than width a. The fabrication of such a waveguide for backplane applications can be both difficult and expensive.

On page 8, please amend ¶ [0047] as follows:

An array of waveguides 100 can then be used to form a backplane system 120 as shown in Figure 7B. As described above in connection with Figure 7A, each waveguide 100 has a width~~[[, a]]~~ designated by a. Backplane system 120 can be constructed using a plurality of generally “I” shaped conductive channels 103 or “C” shaped conductive channels 102A, 102B. Preferably, the conductive channels are made from a conductive material, such as copper, which can be fabricated by extrusion or by bending a sheet of conductive material. The conductive channels can then be laminated (by gluing, for example), between two substrates 118A, 118B, which, in a preferred embodiment, are printed circuit boards (PCBs). The PCBs could have, for example, conventional circuit traces (not shown) thereon.

On page 11, please amend ¶ [0056] as follows:

~~The dispersion characteristic of this mode for a “TEFLON” waveguide is shown in Figure 14, where~~ Figure 14 shows a dispersion plot for the TE 1,0 mode in a prior art NRD “TEFLON” waveguide. Beta and F are the normalized propagation constant and normalized frequency, respectively. That is,

$$\text{Beta} = a\beta/2 \quad (9)$$

and

$$F = (a\omega/2c)(D_r - 1)^{0.5}, \quad (10)$$

where c is the speed of light, and D_r is the relative dielectric constant of dielectric channel 22. The range of operation is for values of f between 1 and 2 where there is only moderate dispersion.